DCR SWM REGULATORY PROCESS:
UPDATE ON PERIPHERAL ACTIVITIES
By Scott Crafton
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BY AUGUST, 2007, THE TAC's MAIN TECHNICAL CONCERNS WITH PART 2 OF THE REGULATIONS WERE:

1. A suggestion to simplify proposed water quality criteria to have only a single nutrient load limit for TP, the pollutant the regulated community is used to working with now, in order to simplify the requirements and avoid creating the opportunity for more "math games" in seeking to comply

2. A concern that DCR still needed to improve the water QUANTITY control criteria in the regulations, including giving consideration to adding a groundwater recharge requirement

3. A desire for more objective scrutiny and testing of proposed criteria by design professionals

WORK BY THE CWP STAFF AND TOM SCHUELER CONTINUED DURING THE FALL AND WINTER OF 2007-2008

1. Since last September, DCR staff, CWP staff and Tom Schueler of the Chesapeake Stormwater Network have continued to work on responding to TAC comments to improve BMP design criteria, refining runoff volume reduction and pollutant removal values for both non-structural and structural BMPs.

2. Work has also continued on improving the associated computation methods needed to demonstrate compliance.

3. The TAC will receive a thorough briefing about the proposed changes to criteria at the July 16th meeting. However, the following is a brief overview.

CHANGES FROM THE ORIGINAL WATER QUALITY CRITERIA PROPOSAL

1. To simplify the water quality criteria for compliance purposes, we are now proposing a single load limit for TP of 0.28 lb./ac./yr. – based on a single Virginia-specific EMC for TP of 28 mg/L and tied to the Virginia Chesapeake Bay Tributary Strategy nutrient reduction goals for developing lands – regardless of the amount of impervious cover on the development site

2. Because the palette of BMPs will reduce nitrogen as well as phosphorus, we believe we can calculate TN reductions as well, showing that resulting stormwater management plans will capture the majority of the nitrogen that the earlier proposal would have mandated

3. We continue to use the Simple Method calculation procedure, but instead of basing it only on the percent of imperviousness, it is now based on runoff coefficients for three land covers – turf or disturbed soils, forest, and impervious – and four hydrologic soil groups.

4. We are proposing BMP pollution removal values (reduction of the MASS load) that are based on two factors: (1) the reduction of runoff volume; and (2) the removal of pollutants (i.e., the reduction of the EMC) by the specific treatment process(es) provided by the BMP (e.g., settling, filtering, biological uptake, etc.); this reflects the best current thinking of stormwater management experts from around the nation.

4. Instead of providing "LID Credits" that were largely optional and incentivized, we are now proposing a system of runoff volume reduction values applied to both structural and non-structural (LID/BSD) practices. In fact, our approach will be to simply have an integrated list of BMPs, without using confusing labels, such as structural vs. non-structural, LID vs. conventional, etc., and we will steer away from use of the terms such as "credits."

5. These factors make runoff volume reduction a necessary consideration at every site, which is more likely to maintain pre-development runoff volume, duration, and velocity; promote groundwater recharge; and enhance pollution removal.

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6. Instead of the treatment volume being based on the concept of the "first flush" (typically, the first ½-inch of runoff multiplied by the impervious area of the site), we are now proposing to capture runoff from the first one-inch of rainfall (the 90^{th} percentile storm event). This also provides significant treatment for larger storms and helps accomplish receiving channel protection goals.

7. We are proposing updated BMP design criteria based on the most recent research, reflecting design features that truly make a difference in BMP performance. We are now proposing two levels of performance for each BMP – a level 1 design, with design criteria proven to achieve the median level of pollution removal as reflected in national BMP performance database.; and a level 2 design, with enhanced design features proven to achieve the 75^{th} percentile level of pollution removal reflected in the database.

8. We are proposing a uniform spreadsheet methodology to demonstrate compliance.

9. The earlier proposed criteria were tested to a limited degree on real site plans; now we are testing the revised criteria and the spreadsheet methodology more vigorously and more objectively.

10. The aggregate benefits of all these changes are:

    a. The collective criteria are based on much stronger and more current science;
    b. They will lead to better BMP designs and site designs;
    c. They truly integrate all BMPs together;
    d. They reward designs that retain open space, avoid mass grading, reduce imperviousness and incorporate "treatment trains;" and
    e. They provide less opportunity for designers to play "math games" to achieve compliance.

SITE PLAN DESIGN CHARETTE WORKSHOPS

1. A key TAC desire was to provide opportunity for vigorous practical testing of the regulatory criteria, involving experienced design professionals, to assure achievability of the criteria and gain understanding of their relative cost impacts

2. DCR was contacted by the Virginia section of the ASCE, who were interested in helping DCR develop truly effective SWM regs.

3. ASCE agreed to help DCR conduct a series of site plan design charette workshops in various areas of Virginia, to allow their members and other professionals to become familiar with the regulatory proposals and to engage them in helping to evaluate the criteria using real-world site plans.

4. The site plans being used were challenging, real-world plans that had been approved under the existing regulations. They reflected locations in all three physiographic provinces of Virginia – the coastal plain, piedmont, and ridge and valley (including a karst site) – and they reflected different types of development projects with a range of impervious cover.

5. The five workshops were attended by over 250 people, affiliated as follows:

    a. State agencies: 10% (mostly DCR and VDOT)
    b. Federal agencies: 2 people
    c. Local governments: 27%
    d. Building industry/consultants: 53%
    e. Environmental organizations: 6%
    f. BMP manufacturers: 2%
    g. Academicians: 2%

6. The first set of workshops has been focused just on the water QUALITY criteria, since DCR had not yet completed work on the water quantity criteria.

6. The first part of each workshop was devoted to presenting and explaining the proposed criteria and spreadsheet methodology. Then the participants were divided into teams, with each team given 1-1/2 to 2 hours to develop a stormwater management plan that complies with the proposed criteria.

7. Most teams were able to develop a compliant solution, with some teams able to develop more than one option, depending on the complexity of the site. Some general observations are:

    a. Participants found that it was almost always necessary to employ multiple BMPs and treatment trains in order to comply
    b. At the first (pilot) workshop, where two VDOT highway plans were assigned, the teams had difficulty complying with the criteria, largely due to limited rights-of-way and, thus, insufficient space and drainage area for BMPs
    c. Participants expressed concern regarding the increased costs of compliance and long-term cost of and responsibility for BMP maintenance
    d. Participants expressed concern that it was difficult to get a full understanding of the implications of the new requirements since the water QUANTITY criteria were not yet integrated into the spreadsheet methodology

8. At the end of each workshop, the teams presented their solutions to the entire group, discussed their perceptions and concerns, and provided suggestions for improvements.

9. During April and May, DCR held three meetings with a stakeholder work group to help develop water QUANTITY control criteria for the regulations, which have been drafted and circulated to the members for comment.

10. The CWP staff are using these workshop participant recommendations and the proposed water quantity control criteria as a basis for improving the spreadsheet methodology and making it more complete.

11. DCR plans to conduct several additional site plan charette workshops in July and August to test the complete spreadsheet methodology.

PROGRESS ON THE STORMWATER MANAGEMENT HANDBOOK:

1. During the fall of 2007, DCR formed a TAC for the SWM Handbook update and held an initial meeting of the group.

2. Work has commenced on the Handbook outline and certain chapters. Pieces that have been drafted initially are:

    a. Chapter 1, Introduction
    b. Chapter 4, Why Stormwater Matters
    c. Chapter 5, Managing Stormwater (only begun; not completed)

3. Work is now proceeding on the chapter pertaining to a Uniform Sizing Criteria, since that is substantively linked to the criteria.

4. Tom Schueler is working on initial drafts of the various BMP standards and specifications. Scott Crafton will assist with formatting them for the Virginia Handbook. Ultimately, the BMP standards and specifications will be referred to in the Handbook but posted in full only on the Stormwater BMP Clearinghouse web site.

5. Regarding pertinent calculation procedures, those currently in the Handbook for hydrologic and hydraulic purposes are likely to remain as they are. However, appropriate adjustments to the Simple Method calculation procedure will be articulated and explained. Also, the Energy Balance Equation being proposed for use in the channel protection criteria will be articulated and explained.

6. Work on other chapters will follow, as these are more in the nature of guidance rather than actual required criteria or procedures.

7. DCR will conduct another meeting with the Handbook TAC this summer and begin to circulate draft documents to committee members for comment via email.

PROGRESS ON THE STORMWATER BMP CLEARINGHOUSE WEB SITE:

1. Since last fall, the BMP Clearinghouse Committee has had a series of subcommittee meetings to clarify the research protocol and approval procedures BMP manufacturers will need to use to gain certification of performance levels and approval of their products for use in Virginia.

2. The Committee has also had a series of subcommittee meetings to develop templates and organization for the actual web site. An initial draft web site has been set up by a designer at Virginia Tech, but so far this is just a loose framework that still needs explanatory text and graphics to be developed. Much of the text and graphics will be derived from parts of the SWM Handbook, to which the site will be closely related.

3. Initially, the web site will be a fairly static site, but eventually DCR hopes to make the site more robust, built around a database of information, which will allow much more interaction between various parts of the site, as linked to elements in the database.

4. DCR still expects the initial web site to be accessible to the public by the end of this summer, prior to the Soil and Water Conservation Board making a decision to approve draft regulations for public comment.